(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: US 2020/0364940 A1

Coup et al. (43) **Pub. Date:** **Nov. 19, 2020**

(54) **SYSTEMS AND METHODS FOR GENERATING STEREOSCOPIC, AUGMENTED, AND VIRTUAL REALITY IMAGES**

(71) Applicant: **Universal City Studios LLC**, Universal City, CA (US)

(72) Inventors: **Thierry Coup**, Orlando, FL (US); **Brian McQuillian**, Orlando, FL (US); **Justin Schwartz**, Orlando, FL (US)

(21) Appl. No.: **16/984,845**

(22) Filed: **Aug. 4, 2020**

Related U.S. Application Data

(63) Continuation of application No. 15/586,956, filed on May 4, 2017.

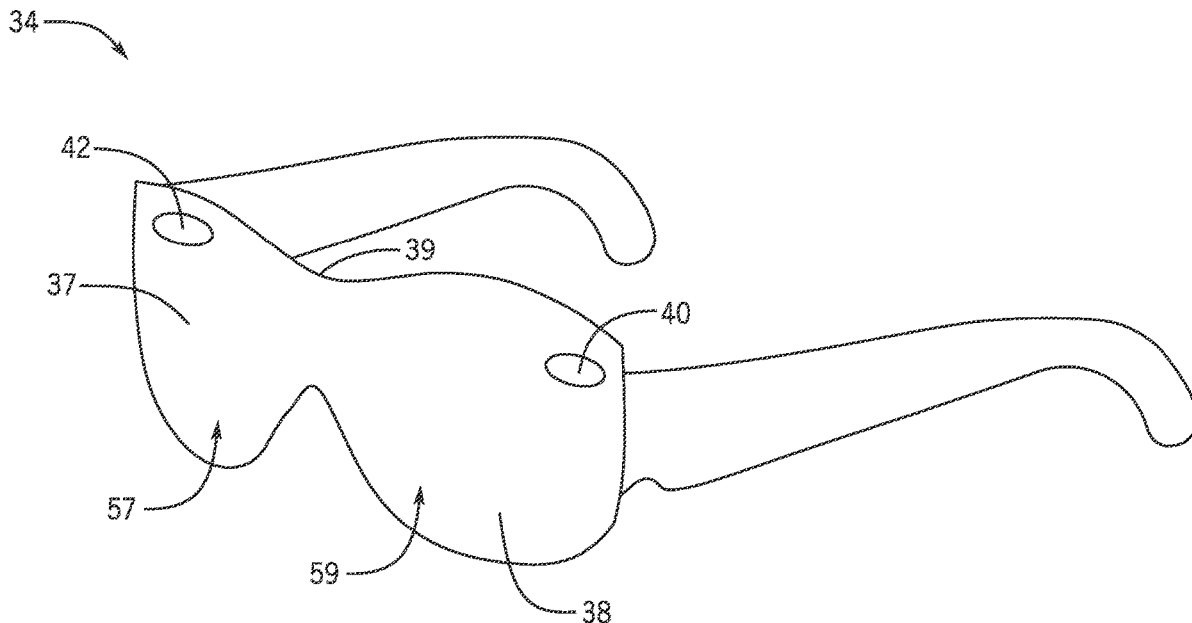(60) Provisional application No. 62/332,299, filed on May 5, 2016.
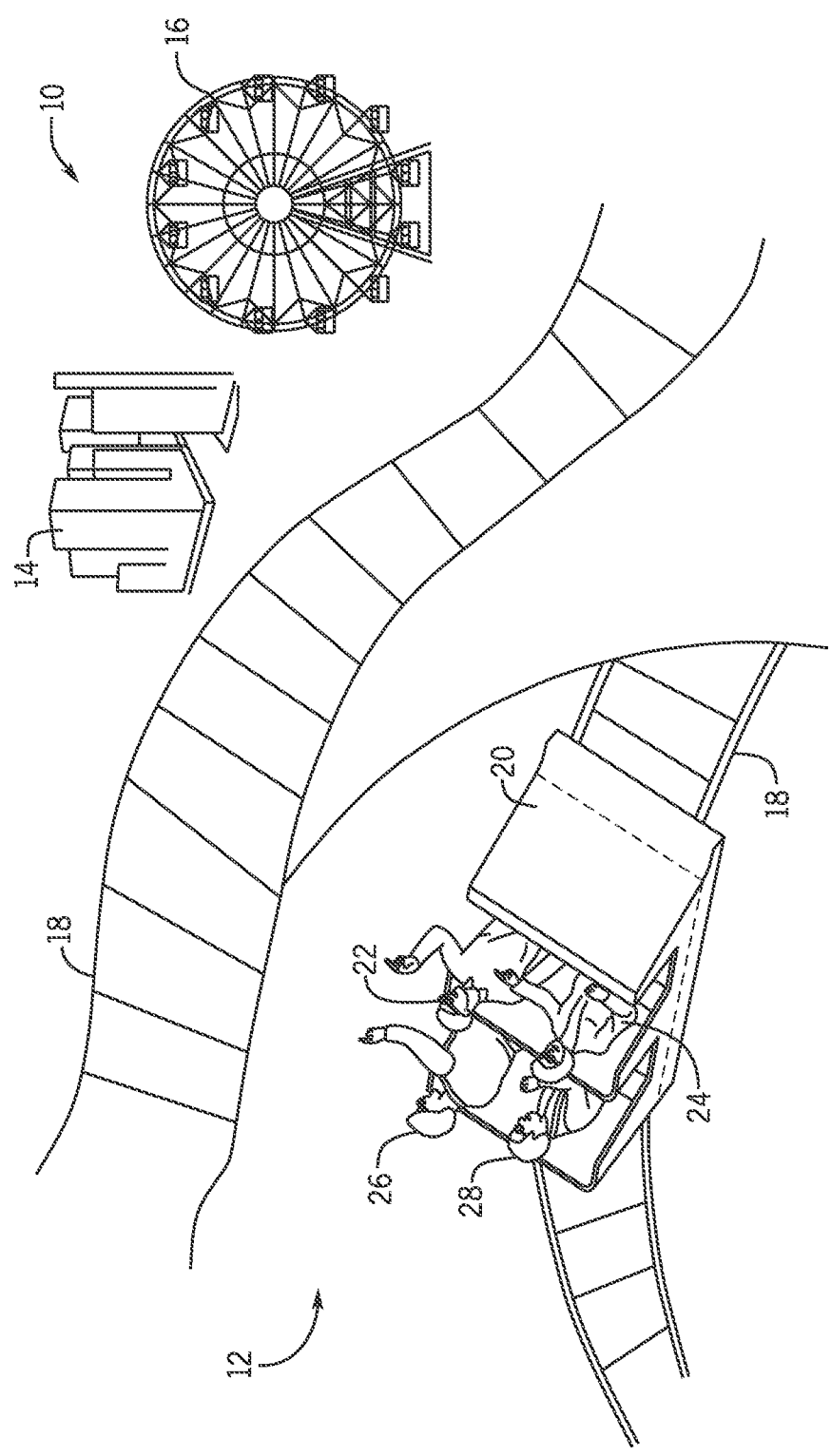
Publication Classification

(51) **Int. Cl.**
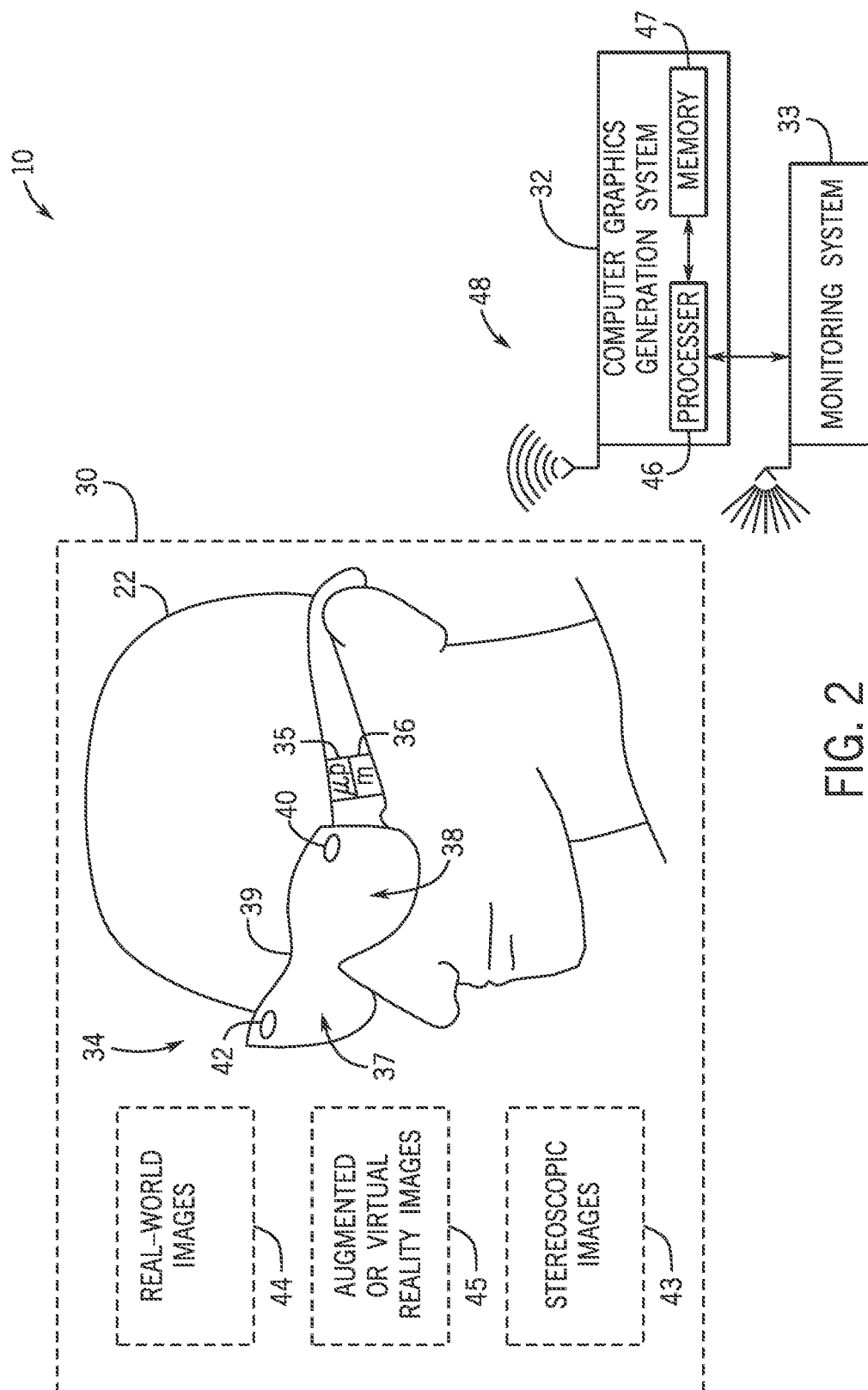|	
G06T 19/00	(2006.01)
H04N 13/324	(2006.01)
H04N 13/337	(2006.01)
H04N 13/344	(2006.01)
H04N 13/366	(2006.01)
H04N 13/383	(2006.01)
H04N 13/363	(2006.01)
H04N 13/239	(2006.01)
A63G 31/16	(2006.01)
G06F 3/01	(2006.01)
G02B 30/25	(2006.01)
A63G 7/00	(2006.01)
A63G 31/00	(2006.01)
G02B 27/01	(2006.01)

(52) **U.S. Cl.**
CPC *G06T 19/006* (2013.01); *H04N 2213/008* (2013.01); *H04N 13/337* (2018.05); *H04N 13/344* (2018.05); *H04N 13/366* (2018.05); *H04N 13/383* (2018.05); *H04N 13/363* (2018.05); *H04N 13/239* (2018.05); *A63G 31/16* (2013.01); *G06F 3/011* (2013.01); *G02B 30/25* (2020.01); *A63G 7/00* (2013.01); *A63G 31/00* (2013.01); *G02B 27/0172* (2013.01); *G02B 27/0179* (2013.01); *G02B 2027/0134* (2013.01); *G02B 2027/0138* (2013.01); *G02B 2027/014* (2013.01); *G02B 2027/0178* (2013.01); *G02B 2027/0181* (2013.01); *G02B 2027/0183* (2013.01); *G02B 2027/0187* (2013.01); *H04N 13/324* (2018.05)

(57) **ABSTRACT**

A ride system includes eyewear configured to be worn by a user. The eyewear includes a display having a stereoscopic feature configured to permit viewing of externally projected stereoscopically displayed images. The ride system includes a computer graphics generation system communicatively coupled to the eyewear, and configured to generate streaming media of a real world environment based on image data captured via the camera of the eyewear, generate one or more virtual augmentations superimposed on the streaming media of the real world environment, and to transmit the streaming media of the real world environment along with the one or more superimposed virtual augmentations to be displayed on the display of the eyewear, and project stereoscopic images into the real world environment.

FIG. 1

10

30

22

35

W
U
E

36

40

39

38

34

42

37

REAL-WORLD
IMAGES

44

AUGMENTED
OR VIRTUAL
REALITY IMAGES

45

STEREOSCOPIC
IMAGES

43

48

32

COMPUTER GRAPHICS
GENERATION SYSTEM

47

MEMORY

46

PROCESSER

33

MONITORING SYSTEM

FIG. 2

34

42

37

39

40

38

59

57

FIG. 3

FIG. 4

80

82 — RECEIVE EYEWEAR POSITION
INFORMATION IN AN ENVIRONMENT

84 — DETERMINE THAT THE EYEWEAR WILL BE IN
PROXIMITY OF A DESIRED STEREOSCOPIC EFFECT

86 — PROJECT STEREOSCOPIC IMAGES WITHIN THE
ENVIRONMENT WHEN THE EYEWEAR IS IN THE
PROXIMITY OF THE DESIRED STEREOSCOPIC EFFECT

88 — RECEIVE UPDATED EYEWEAR POSITION
INFORMATION IN THE ENVIRONMENT

90 — DETERMINE THAT THE EYEWEAR WILL BE
IN PROXIMITY OF A DESIRED AUGMENTED
OR VIRTUAL REALITY EFFECT

92 — RECEIVE OR ACCESS IMAGE DATA REPRESENTING A
REAL-WORLD VISUALIZATION OF THE ENVIRONMENT

94 — OVERLAY AUGMENTED OR VIRTUAL REALITY IMAGE
DATA ONTO VISUALIZATION OF THE ENVIRONMENT

96 — TRANSMIT OVERLAID AUGMENTED OR VIRTUAL
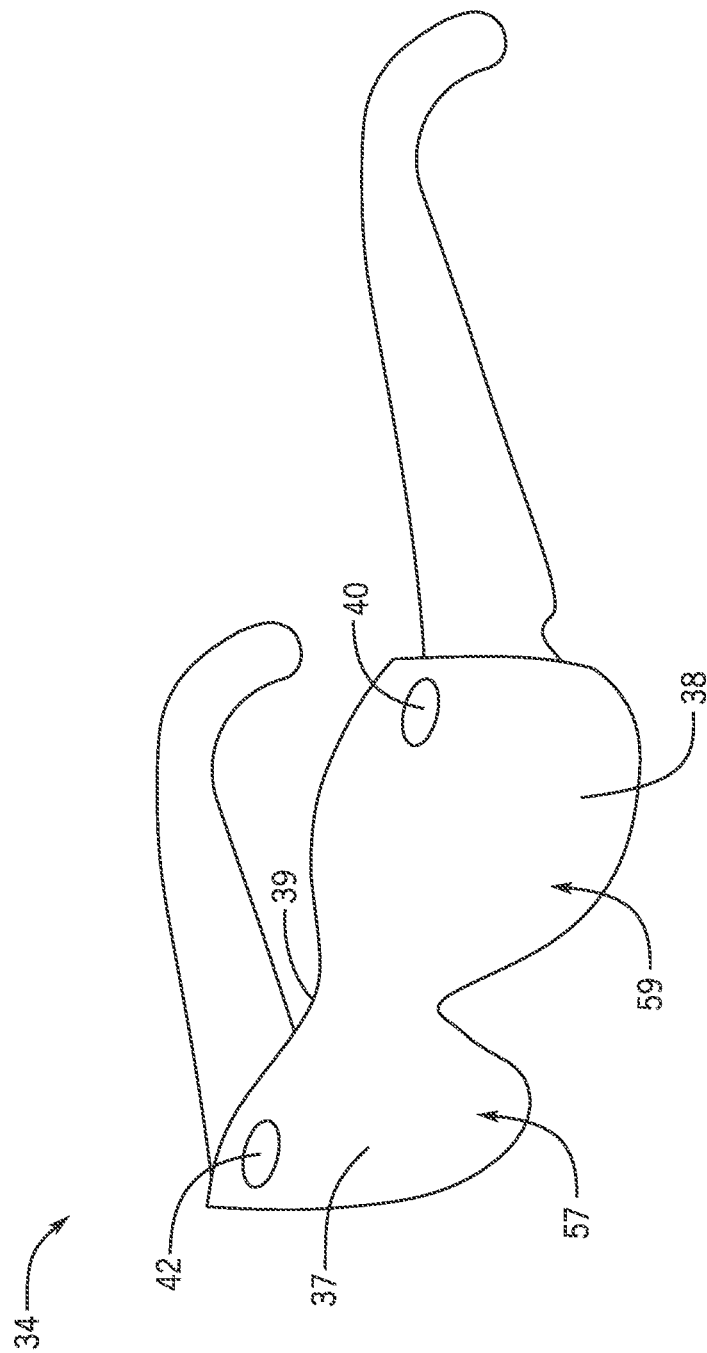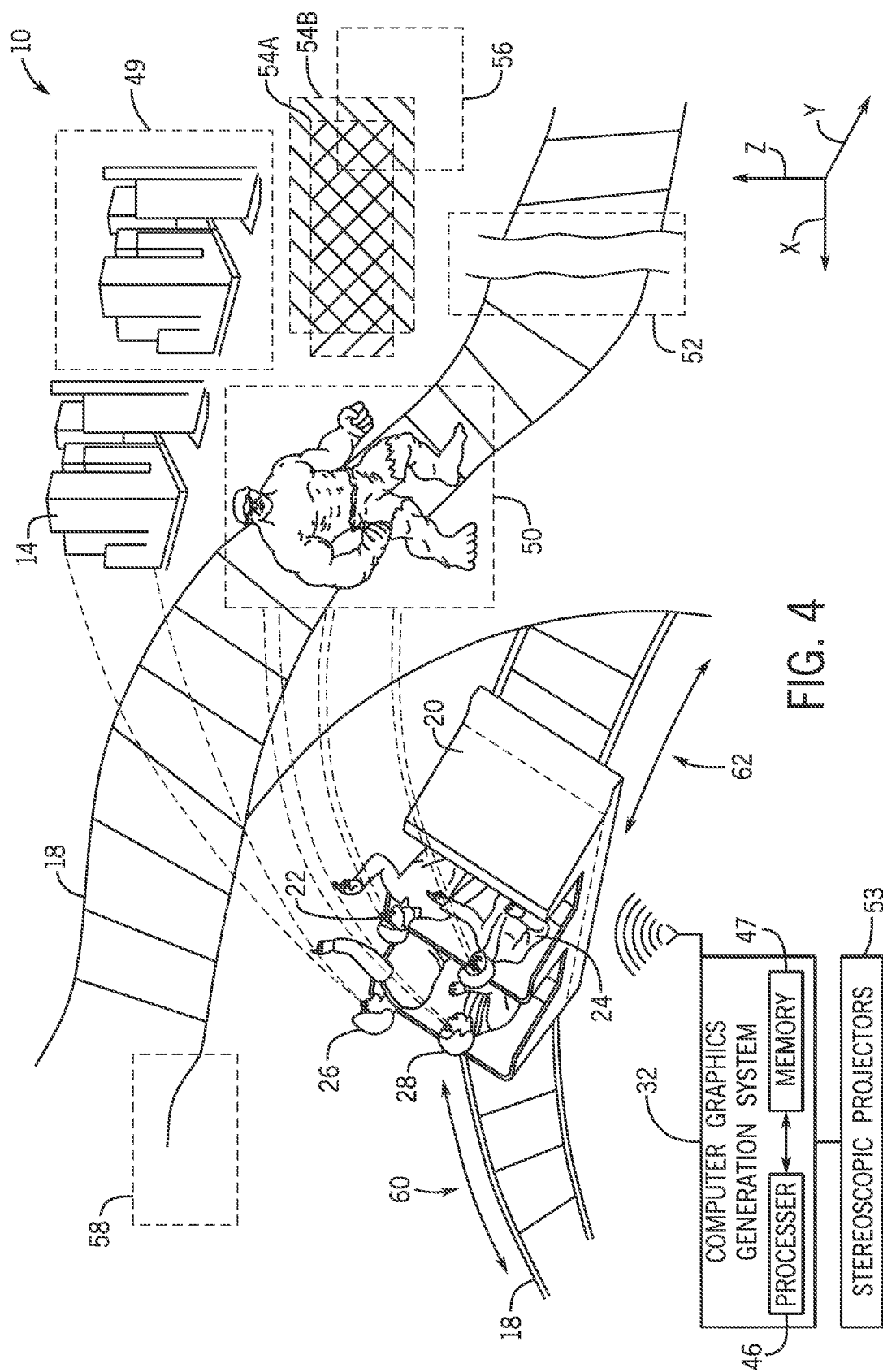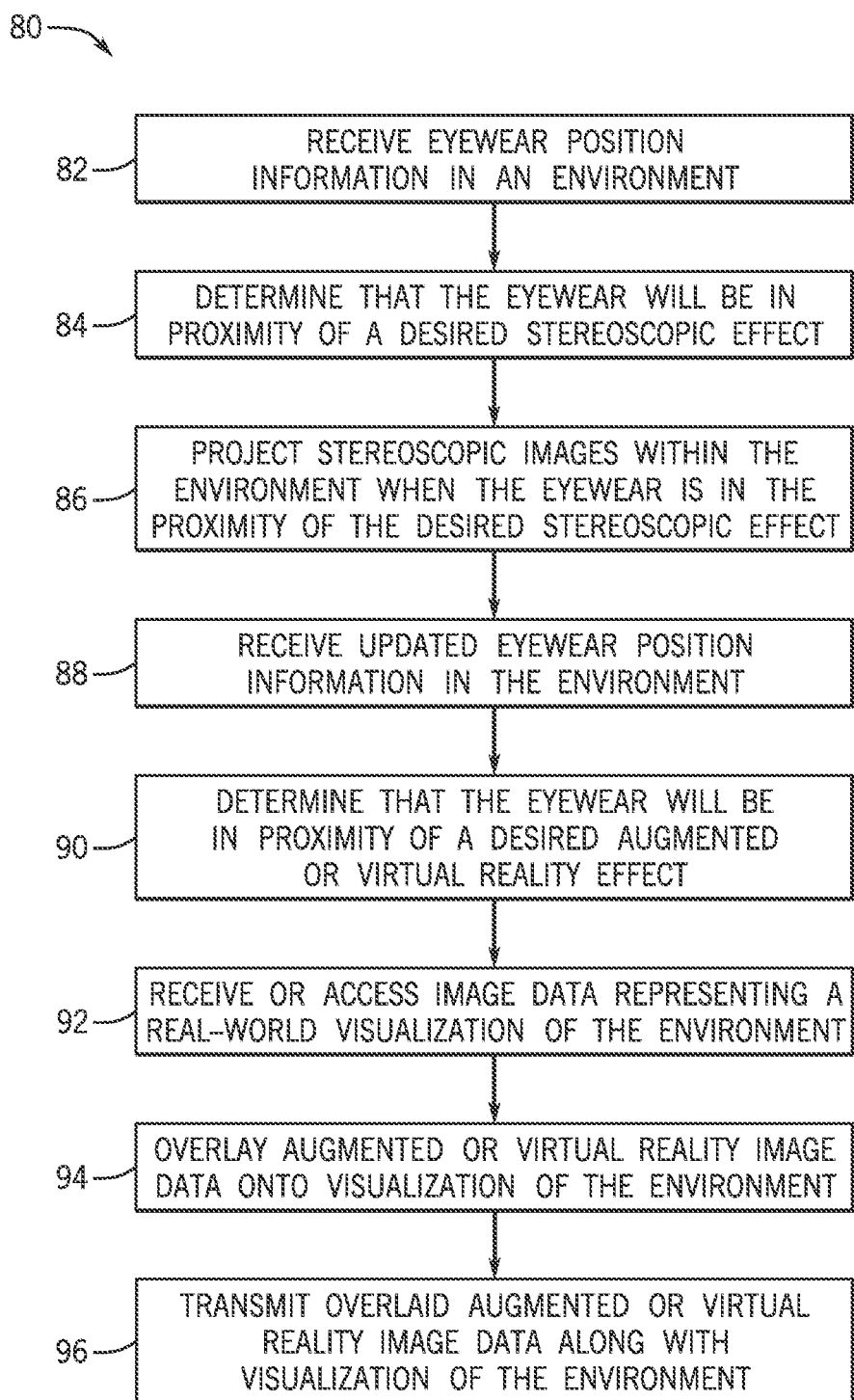REALITY IMAGE DATA ALONG WITH
VISUALIZATION OF THE ENVIRONMENT

FIG. 5

SYSTEMS AND METHODS FOR GENERATING STEREOSCOPIC, AUGMENTED, AND VIRTUAL REALITY IMAGES

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of U.S. Provisional Application No. 62/332,299, entitled "SYSTEMS AND METHODS FOR GENERATING STEREOSCOPIC, AUGMENTED, AND VIRTUAL REALITY IMAGES" and filed May 5, 2016, and is a continuation of U.S. patent application Ser. No. 15/586,956, entitled "SYSTEMS AND METHODS FOR GENERATING STEREOSCOPIC, AUGMENTED, AND VIRTUAL REALITY IMAGES" and filed May 4, 2017, the disclosures of which are incorporated herein by reference for all purposes.

BACKGROUND

[0002] The subject matter disclosed herein relates to amusement park attractions, and more specifically, to providing enhanced thrill factors and components of interest in amusement park attractions.

[0003] Amusement parks and/or theme parks may include various entertainment attractions, restaurants, and rides useful in providing enjoyment to patrons (e.g., families and/or people of all ages) of the amusement park. For example, the attractions may include traditional rides for kids such as carousels, as well as traditional rides for thrill seekers such as rollercoasters. It is now recognized that adding components of interest and thrill factors to such attractions can be difficult and limiting. Traditionally, for example, outside of providing an increasingly complex system of steep, twisting, and winding rollercoaster tracks, the thrill factor of such rollercoasters and/or other similar thrill rides may be limited to the existing course or physical nature of the thrill ride itself. It is now recognized that it is desirable to include components of interest and thrill factors in such attractions in a flexible and efficient manner relative to traditional techniques.

BRIEF DESCRIPTION

[0004] Certain embodiments commensurate in scope with the present disclosure are summarized below. These embodiments are not intended to limit the scope of the disclosure, but rather these embodiments are intended only to provide a brief summary of possible forms of present embodiments. Indeed, present embodiments may encompass a variety of forms that may be similar to or different from the embodiments set forth below.

[0005] In one embodiment, a ride system includes eyewear configured to be worn by the user, wherein the eyewear comprises a display having a stereoscopic feature configured to permit viewing of externally generated stereoscopically displayed images. The ride system includes a computer graphics generation system communicatively coupled to the eyewear, and configured to generate streaming media of a real world environment based on image data captured via the camera of the eyewear, generate one or more virtual augmentations superimposed on the streaming media of the real world environment, transmit the streaming media of the real world environment along with the one or more superim-

posed virtual augmentations to be displayed on the display of the eyewear, and project stereoscopic images into the real world environment.

[0006] In a second embodiment, a wearable electronic device includes a frame comprising a frame front; a left eye display lens and a right eye display lens coupled to the frame front; a first filter on the left eye display lens; a second filter on the right eye display lens, wherein the first filter is different than the second filter; and processing circuitry configured to: receive a signal from the computer graphics generation system, wherein the signal comprises a video stream of a virtualization of a real world environment along with at least one augmented reality (AR) image or at least one virtual reality (VR) image included in the video stream; and cause the left eye display and the right eye display to display the video stream.

[0007] In a third embodiment, a method includes receiving or accessing environmental image data via a computer graphics generation system, generating a virtualization of a real world environment of the amusement park based on the environmental image data; overlaying an augmented reality (AR) image or a virtual reality (VR) image onto the virtualization of the real world environment; transmitting the overlaid AR image or the VR image along with the virtualization of the real world environment to the eyewear during the cycle of the amusement park ride; transmitting a signal to the eyewear to permit viewing through displays of the eyewear; projecting stereoscopic images onto a surface of the real-world environment after transmitting the signal; and causing the stereoscopic images to be reflected through filters in the eyewear into a left and right eye of a user to generate an illusion of a 3D image.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] These and other features, aspects, and advantages of the present disclosure will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

[0009] FIG. 1 illustrates an embodiment of an amusement park including one or more attractions in accordance with the present embodiments;

[0010] FIG. 2 is an illustration of an embodiment of stereoscopic augmented reality (AR) or virtual reality (VR) eyewear and a computer graphics generation system in accordance with present embodiments;

[0011] FIG. 3 is an illustration of an embodiment of stereoscopic augmented reality (AR) or virtual reality (VR) eyewear;

[0012] FIG. 4 is a perspective view of a thrill ride of FIG. 1 including various AR and VR images provided by way of the stereoscopic AR/VR eyewear of FIG. 2, in accordance with present embodiments; and

[0013] FIG. 5 is a flowchart illustrating an embodiment of a process useful in creating stereoscopic images within an AR experience, a VR experience, or a mixed reality experience during a ride by using the computer graphics generation system of FIG. 2, in accordance with present embodiments.

DETAILED DESCRIPTION

[0014] One or more specific embodiments of the present disclosure will be described below. In an effort to provide a

concise description of these embodiments, all features of an actual implementation may not be described in the specification. It should be appreciated that in the development of any such actual implementation, as in any engineering or design project, numerous implementation-specific decisions must be made to achieve the developers' specific goals, such as compliance with system-related and business-related constraints, which may vary from one implementation to another. Moreover, it should be appreciated that such a development effort might be complex and time consuming, but would nevertheless be a routine undertaking of design, fabrication, and manufacture for those of ordinary skill having the benefit of this disclosure.

[0015] Present embodiments relate to systems and methods of providing a stereoscopic mixed or augmented reality (AR) experience, a virtual reality (VR) experience, or a combination thereof, as part of an attraction, such as a thrill ride, in an amusement park or theme park. In certain embodiments, each ride passenger (e.g., first passenger, second passenger, etc.) may be provided eyewear, such as a pair of electronic goggles or eyeglasses to be worn during a cycle of the thrill ride. The eyewear may facilitate an AR experience, a VR experience, or a combination of both experiences. Thus, the eyewear may be referred to as stereoscopic eyewear or stereoscopic AR/VR eyewear. The stereoscopic AR/VR eyewear provides the capability of viewing stereoscopic images, which generate the illusion of 3D images. In addition, the stereoscopic AR/VR eyewear is configured for displaying augmented or virtual reality images overlaid on an image of the user's real-world environment, which generates the illusion that the overlaid image is part of the real world environment. Accordingly, the stereoscopic AR/VR eyewear is implemented with display lenses that are capable of displaying the overlaid AR/VR images transmitted from a central controller as well as being capable of permitting the user to view the real-world environment, including any stereoscopically displayed images. For example, the display lenses may be implemented with a polarizing layer, active shutters, color shifting capability, or other technology that permits stereoscopic viewing and that is compatible with the AR/VR capability of the eyewear. In this manner, a single eyewear device may be used within an environment to render a variety of different types of visual experiences. At the base level, the eyewear may also permit unaided, non-stereoscopic, or unaugmented viewing in certain instances, e.g., at the start of a theme park ride to permit the users to acclimatize themselves to the environment.

[0016] The stereoscopic AR/VR eyewear is capable of acting as a display for images that are created to reflect the real-world environment with augmented images. In such embodiments, the users view a displayed image that is displayed on the lenses of the eyewear in a manner that create the illusion that the augmented image is the real-world environment viewed in real time. The images of the real-world environment may be recorded ahead of time, e.g., may be stored in a memory of the system, or, in certain embodiments, may be collected in real-time by a user. Specifically, in one embodiment, the eyewear includes at least two cameras, which may respectively correspond to the respective points of view (e.g., right and left eye views) of the ride passengers, and may be used to capture real-time video data (e.g., video captured during live use and transmitted in substantially real-time) of the real-world environment (e.g., aspects of the physical amusement park) of the

ride passengers and/or the thrill ride. The eyewear may also include a display. For example, the eyewear may include at least two displays respectively corresponding to each eye of a ride passenger using the eyewear.

[0017] In certain embodiments, a computer graphics generation system may also be provided. The computer graphics generation system may receive the real-time video data (e.g., live video that is transmitted in substantially real-time) from the eyewear, and may render a video stream of the real-world environment along with various AR, VR, or combined AR and VR (AR/VR) graphical images to the respective displays of the respective eyewear of the ride passengers during a cycle of the ride. For example, in one embodiment, the computer graphics generation system may render the AR/VR graphical images to the eyewear based on, for example, the position or location of a ride passenger vehicle along the tracks of a rollercoaster during a cycle of a thrill ride, a predetermined distance traveled by the passenger ride vehicle during a cycle of the thrill ride, or after a predetermined lapse of time in the cycle of the thrill ride. In this way, by using the eyewear and the graphics generation system to create an AR experience, a VR experience, or mixed reality experience, the eyewear and the computer graphics generation system may enhance the thrill factor of the thrill ride, and, by extension, may enhance the experience of the ride passengers as they ride the thrill ride. However, it should be appreciated that the techniques described herein may not be limited to thrill rides and/or amusement park attraction applications, but may also be extended to any of various applications such as, for example, medical applications (e.g., image-guided surgery, noninvasive imaging analysis), engineering design applications (e.g., engineering model development), manufacturing, construction, and maintenance applications (e.g., products manufacturing, new building construction, automobile repairs), academic and/or vocational training applications, exercise applications (e.g., bodybuilding and weight loss models), television (TV) applications (e.g., weather and news), and the like.

[0018] With the foregoing mind, it may be useful to describe an embodiment of an amusement park, such as an example amusement park 10 as depicted in FIG. 1. As illustrated, the amusement park 10 may include a thrill ride 12, a mall of amusement park facilities 14 (e.g., restaurants, souvenir shops, and so forth), and additional amusement attractions 16 (e.g., Ferris Wheel, dark ride, or other attraction). In certain embodiments, the thrill ride 12 may include a rollercoaster or other similar thrill ride, and may thus further include a closed-loop track or a system of closed-loop tracks 18 (e.g., miles of tracks 18). The tracks 18 may be provided as an infrastructure on which a passenger ride vehicle 20 may traverse, for example, as ride passengers 22, 24, 26, 28 ride the thrill ride 12. The tracks 18 may thus define the motion of the ride vehicle 20. However, in another embodiment, for example, the tracks 18 may be replaced by a controlled path, in which the movement of the ride vehicle 20 may be controlled via an electronic system, a magnetic system, or other similar system infrastructure other than the tracks 18. It should be appreciated that while the passenger ride vehicle 20 may be illustrated as a 4-passenger vehicle, in other embodiments, the passenger ride vehicle 20 may include any number of passenger spaces (e.g., 1, 2, 4, 8, 10, 20, or more spaces) to accommodate a single or multiple groups of ride passengers 22, 24, 26, 28. It should be understood that, while the thrill ride 12 is described in the

context of the ride vehicle **20**, other embodiments are contemplated (e.g., a seated theater environment, a walking or free movement arena environment, etc.) and may be used in conjunction with the disclosed embodiments.

[0019] As the passenger ride vehicle **20** traverses the tracks **18**, the ride passengers **22, 24, 26, 28** may be provided a moving tour of the scenery (e.g., facilities **14**, additional amusement attractions **16**, and so forth) in an area around or nearby the thrill ride **12**. For example, this may include the environment surrounding the thrill ride **12** (e.g., a building that fully or partially houses the thrill ride **12**). While the ride passengers **22, 24, 26, 28** may find the thrill ride **12** to be a very enjoyable experience, in certain embodiments, it may be useful to enhance the experience of the ride passengers **22, 24, 26, 28** as the ride passengers **22, 24, 26, 28** ride the thrill ride **12** by enhancing, for example, the thrill factor of the thrill ride **12**. Specifically, instead of having a physical view of only the facilities **14** (e.g., restaurants, souvenir shops, and so forth), additional amusement attractions **16** (e.g., Ferris Wheel or other attractions), or other patrons or pedestrians within the amusement park **10**, it may be useful to provide the ride passengers **22, 24, 26, 28** with a augmented reality (AR) experience or a virtual reality (VR) experience as the ride vehicle **20** traverses the tracks **18**.

[0020] For example, turning now to FIG. **2**, each of the ride passengers **22, 24, 26, 28** may be provided a pair of stereoscopic AR/VR eyewear **34**, which may, in certain embodiments, include eyeglasses. In other embodiments, the stereoscopic AR/VR eyewear **34** may be included as part of a helmet, a visor, a headband, a pair of blinders, one or more eyepatches, and/or other headwear or eyewear that may be worn by each of the ride passengers **22, 24, 26, 28**. As depicted, the stereoscopic AR/VR eyewear **34** may be communicatively coupled to a computer graphics generation system **32** (e.g., within the amusement park **10**) via a wireless network **48** (e.g., wireless local area networks [WLAN], wireless wide area networks [WWAN], near field communication [NFC]). The stereoscopic AR/VR eyewear **34** may be used to create surreal environment **30**, which may include an AR experience, a VR experience, a mixed reality experience, a combination of AR and VR experience, a computer-mediated reality experience, a combination thereof, or other similar surreal environment for the ride passengers **22, 24, 26, 28** as the ride passengers **22, 24, 26, 28** ride the thrill ride **12**. Specifically, the stereoscopic AR/VR eyewear **34** may be worn by the ride passengers **22, 24, 26, 28** throughout the duration of the ride, such that ride passengers **22, 24, 26, 28** may feel completely encompassed by the environment **30** and may perceive the environment **30** to be a real-world physical environment. Specifically, as will be further appreciated, the environment **30** may be a real-time video including real-world images **44** that the ride passengers **22, 24, 26, 28** would see, even when not wearing the stereoscopic AR/VR eyewear **34** electronically merged with one or more AR or VR images **45** (e.g., virtual augmentations). The term "real-time" indicates that the images are obtained and/or provided in a timeframe substantially close to the time of actual observation. In alternative embodiments, the obtained images may be historical images of the environment.

[0021] In certain embodiments, the stereoscopic AR/VR eyewear **34** may be any of various wearable electronic devices that may be useful in creating an AR experience, a VR, and/or other computed-mediated experience to enhance

the thrill factor of the thrill ride **12**, and, by extension, the experience of the ride passengers **22, 24, 26, 28** while on the thrill ride **12**. It should be appreciated that the eyeglasses embodiment of the stereoscopic AR/VR eyewear **34** as discussed herein may be distinct from, and may provide many advantages over traditional devices such as head-mounted displays (HMDs) and/or heads-up displays (HUDs). For example, as will be further appreciated, the stereoscopic AR/VR eyewear **34** may include a number of orientation and position sensors (e.g., accelerometers, magnetometers, gyroscopes, Global Positioning System [GPS] receivers) that may be used to track the position, orientation, and motion of the ride passengers **22, 24, 26, 28** during a cycle of the thrill ride **12**.

[0022] Similarly, features of the stereoscopic AR/VR eyewear **34** (e.g., geometric aspects or markings) may be monitored by a monitoring system (e.g., one or more cameras) to determine position, location, orientation, and so forth of the stereoscopic AR/VR eyewear **34** and, in turn, that of the wearer. Still, the ride passengers **22, 24, 26, 28** may be monitored by a monitoring system **33** (e.g., a camera), which may be communicatively coupled to the computer graphics generation system **32** and used to identify position, location, orientation, and so forth of the ride passengers **22, 24, 26, 28**. The ride vehicle **20** may also include one or more sensors (e.g., weight sensors, mass sensors, motion sensors, ultrasonic sensors) that may be useful in monitoring the respective ride passengers **22, 24, 26, 28** for the graphics generation system **32** to determine the point of view of the respective ride passengers **22, 24, 26, 28**. Moreover, as will be further appreciated, because the stereoscopic AR/VR eyewear **34** may include individual cameras (e.g., cameras **40** and **42**) and individual displays (e.g., displays **37** and **38**), data with respect to the respective points of view of each eye of the ride passengers **22, 24, 26, 28** may be captured by stereoscopic AR/VR eyewear **34**. All of these advantages may be unavailable using devices such as traditional HMDs and/or HUDs.

[0023] In certain embodiments, to support the creation of the environment **30**, the stereoscopic AR/VR eyewear **34** may include processing circuitry, such as a processor **35** and a memory **36**. The processor **35** may be operatively coupled to the memory **36** to execute instructions for carrying out the presently disclosed techniques of generating real-world images **44** merged with one or more AR/VR images **45** to enhance the thrill factor of the thrill ride **12**, and, by extension, the experience of the ride passengers **22, 24, 26, 28** while on the thrill ride **12**. These instructions may be encoded in programs or code stored in a tangible non-transitory computer-readable medium, such as the memory **36** and/or other storage. The processor **35** may be a general-purpose processor, system-on-chip (SoC) device, an application-specific integrated circuit (ASIC), or some other similar processor configuration. In alternative embodiments, the processor **35** and the memory **36** may be provided as an auxiliary pack carried by the user (e.g., clipped at the waited or carried in a pocket), either wired to or in wireless communication with the stereoscopic AR/VR eyewear **34**. In other embodiments, the stereoscopic AR/VR eyewear **34** communicates wirelessly with the computer graphics generation system **32** and does not perform on-board image processing.

[0024] In certain embodiments, as further illustrated, the stereoscopic AR/VR eyewear **34** may also include the pair of

displays **37** and **38** (e.g., which may be provided in the frame front **39** of the stereoscopic AR/VR eyewear **34** where eyeglass lenses would otherwise appear) respectively corresponding to each eye of the ride passengers **22, 24, 26, 28**. In other embodiments, a unified display may be employed. The respective displays **37** and **38** may each include a display that covers at least part or only some of the viewing surface. The displays **37, 38** may be an opaque liquid crystal display (LCD), an opaque organic light emitting diode (OLED) display, or other similar display useful in displaying the real-world images **44** and the AR/VR graphical images **45** to the ride passengers **22, 24, 26, 28**. In another embodiment, the respective displays **37** and **38** may each include a see-through LCD or a see-through OLED display useful in allowing, for example, the ride passengers **22, 24, 26, 28** to view the real-world images **44** and the AR/VR graphical images **45** appearing on the respective displays **37** and **38** while preserving the ability to see through the respective displays **37** and **38** to the actual and physical real world environment (e.g., the amusement park **10**). In yet another embodiment, the displays **37** and **38** permit viewing of stereoscopic images **43**. The displays **37, 38** may also include light field displays. In certain embodiments, the displays **37, 38** may toggle between opaque and transparent configurations, depending on the desired visual environment.

[0025] The cameras **40** and **42** may respectively correspond to the respective points of view of the ride passengers **22, 24, 26, 28**, and may be used to capture real-time video data (e.g., live video) of the real-world environment. In some embodiments, a single camera may be employed. Specifically, in the illustrated embodiment, the cameras **40, 42** of the stereoscopic AR/VR eyewear **34** may be used to capture real-time images of the real-world physical environment (e.g., the physical amusement park **10**) perceived by the respective ride passengers **22, 24, 26, 28** from the point of view of the respective ride passengers **22, 24, 26, 28**. As will be further appreciated, the stereoscopic AR/VR eyewear **34** may then transmit (e.g. wirelessly via one or more communications interfaces included in the stereoscopic AR/VR eyewear **34**) real-time video data captured via the respective cameras **40** and **42** to a computer graphics generation system **32** for processing. However, in other embodiments, the real-time video data captured via the respective cameras **40** and **42** may be processed on the stereoscopic AR/VR eyewear **34** via the processor **35**. Additionally, the stereoscopic AR/VR eyewear **34** may also transmit orientation data, position data, point of view data (e.g., focal length, orientation, pose, and so forth), motion tracking data, and so forth obtained and/or derived based on data obtained via orientation and position sensors (e.g., accelerometers, magnetometers, gyroscopes, Global Positioning System [GPS] receivers, and so forth) motion tracking sensors (e.g., electromagnetic and solid-state motion tracking sensors), and so forth, that may be included in the stereoscopic AR/VR eyewear **34**. Further, in embodiments in which the real-world image data of the environment (e.g., the ride **12**) is previously acquired and accessed, the stereoscopic AR/VR eyewear may be implemented without the cameras **40** and **42**.

[0026] In certain embodiments, as previously noted, the computer graphics generation system **32**, which may also includes processing circuitry, such as a processor **46** (e.g., general purpose processor or other processor) and a memory **47**, may process the real-time video data (e.g., live video) and orientation and position data and/or point of view data received from the stereoscopic AR/VR eyewear **34** or the monitoring system **33**. Specifically, the computer graphics generation system **32** may use this data to generate a frame of reference to register the real-time video data with the generated real-world images **44** and the AR/VR graphical images **45**. Specifically, using the frame of reference generated based on the orientation data, position data, point of view data, motion tracking data, and so forth, the graphics generation system **32** may then render a view of the real-world images **44** that is temporally and spatially commensurate with what the respective ride passengers **22, 24, 26, 28** would perceive if not wearing the stereoscopic AR/VR eyewear **34**. The graphics generation system **32** may constantly update (e.g., in real-time) the rendering of the real-world images to reflect change in respective orientation, position, and/or motion of the respective the ride passengers **22, 24, 26, 28**.

[0027] For example, in certain embodiments, the graphics generation system **32** may render images (e.g., real world images **44** and AR/VR images **45**) at a real-time rate greater than or equal to approximately 20 frames per second (FPS), greater than or equal to approximately 30 FPS, greater than or equal to approximately 40 FPS, greater than or equal to approximately 50 FPS, greater than or equal to approximately 60 FPS, greater than or equal to approximately 90 FPS, or greater than or equal to approximately 120 FPS. Furthermore, the graphics generation system **32** may generate the real-world images **44** for each of the respective stereoscopic AR/VR eyewear **34** worn by the respective ride passengers **22, 24, 26, 28** (e.g., adjusted for the respective orientation, position, and point of view of the respective ride passengers **22, 24, 26, and 28**).

[0028] In certain embodiments, as previously discussed, the computer graphics generation system **32** may also generate and render one or more AR/VR graphical images **45** superimposed on the real-world images **44** to create a complete AR experience, VR experience, mixed reality, and/or other computer-mediated experience for the ride passengers **22, 24, 26, 28**. For example, in certain embodiments, the computer graphics generation system **32** may utilize one or more of the discussed video merging and/or optical merging techniques to superimpose the AR/VR graphical images **45** onto the real-world images **44**, such that the ride passengers **22, 24, 26, 28** perceive the real-world physical environment of the amusement park **10** (e.g., provided as rendered video data via the respective displays **37** and **38**) along with an AR/VR graphical image **45** (e.g., virtual augmentations) as the passenger ride vehicle **20** traverses the tracks **18**. Specifically, as discussed above with respect to the rendering of the real-world images **44**, the graphics generation system **32** may render a view of the AR/VR graphical images **45** that is temporally and spatially commensurate with the real-world images **44**, such that the real-world images **44** may appear as a background overlaid with the AR/VR graphical images **45**. Indeed, a model may provide computer generated images for any available viewpoint and specific images may be provided to the stereoscopic AR/VR eyewear **34** for display based on a detected orientation of the stereoscopic AR/VR eyewear **34**.

[0029] In certain embodiments, the graphics generation system **32** may also generate one or more brightness, lighting, or shading models, and/or other photorealistic rendering

models to generate the real-world images **44** and the AR/VR graphical images **45** adjusted to accurately reflect contrast and brightness of the real-world physical environment (e.g., sunny day, partly cloudy day, cloudy day, evening, night) in rendering the real-world images **44** and the AR/VR graphical images **45**. For example, to increase the photorealism of the real-world images **44** and the AR/VR graphical images **45**, the graphics generation system **32** may, in some embodiments, receive weather related data from one or more weather forecast and/or prediction systems (e.g., Global Forecast System, Doppler radars, and so forth). The graphics generation system **32** may then use the weather related data or other similar data to adjust the contrast, brightness, and/or other lighting effects of the real-world images **44** and/or the AR/VR graphical images **45**.

[0030] In other embodiments, the graphics generation system **32** may adjust the contrast, brightness, and/or other lighting effects of the real-world images **44** and/or the AR/VR graphical images **45** based on lighting detected from one or more light sensors included in the stereoscopic AR/VR eyewear **34** or based on the real-time video data captured by the cameras **40**, **42**. Furthermore, as previously noted, the graphics generation system **32** may constantly update (e.g., in real-time) the rendering of the AR/VR graphical images **45** to reflect change in respective orientations, positions, points of view, and/or motion of the respective ride passengers **22**, **24**, **26**, **28**. For example, as will be further appreciated with respect to FIG. **3**, the graphics generation system **32** may render the AR/VR graphical images **45** on the respective displays **37** and **38** of each of the respective stereoscopic AR/VR eyewear **34** worn by the respective the ride passengers **22**, **24**, **26**, **28** adjusted for the variable respective positions, points of view, and motions of the respective the ride passengers **22**, **24**, **26**, and **28**.

[0031] As will be further appreciated, the graphics generation system **32** may also generate the AR/VR graphical images **45** at a time in which the passenger ride vehicle **20** crosses at a predetermined point along the tracks **18**. Thus, in certain embodiments, the graphics generation system **32** may use the received position data, point of view data, motion data along with GPS data or geographical informational systems (GIS) data to derive an illumination map of, for example, the thrill ride **12** and tracks **18**, as well as the immediate environment surrounding the thrill ride **12** for the entire cycle of the thrill ride **12**. The graphics generation system **32** may then use the map to introduce the AR/VR graphical images **45** at certain predetermined points (e.g., points based on location, distance, or time) as the passenger ride vehicle **24** traverses the tracks **18**. Furthermore, in certain embodiments, the video or image data captured via the cameras **40**, **42** may be used by the graphics generation system **32** to determine the points of location of the ride vehicle **20** and when to introduce the AR/VR graphical images **45**. For example, the graphics generation system **32** may perform one or more geometric recognition algorithms (e.g., shape or object recognition) or photometric recognition algorithms (e.g., face recognition or specific object recognition) to determine the position or location of the ride vehicle **20** as well as the viewing position of the ride passengers **22**, **24**, **26**, **28**.

[0032] FIG. **3** is an illustration of the stereoscopic AR/VR eyewear **34** showing an embodiment in which the stereoscopic AR/VR eyewear **34** includes features that also permit viewing of externally projected stereoscopic images. For example, the displays **37** and **38** may include a polarization feature such as a polarized coating or layer to permit the user to resolve stereoscopically projected images as being in 3D. The polarization feature may be coated on an outer surface **57** of the display **37** and an outer surface of the display **38**. Alternatively, the polarization feature may be formed within, embedded in, or formed on an opposing surface of the displays **37** and **38**. The polarization feature on the right eye display **37** has different polarization characteristics than the polarization feature on the left eye display **38** to permit each respective display **37** and **38** to act as a filtered lens that only permits polarized light having the appropriate characteristics to pass through. In this manner, two images projected superimposed onto a screen may viewed stereoscopically. In certain embodiments, the polarization feature in the respective displays may be linear polarization filters orthogonally oriented relative to one another. In another embodiment, the polarization filters of the displays **37** and **38** may be circular polarization filters of opposite handedness relative to one another. In another embodiment, the stereoscopic AR/VR eyewear **34** has color-shifting filters, such that the respective displays **37** and **38** include color filters that filter different wavelengths relative to one another. In a specific embodiment, the stereoscopic AR/VR eyewear **34** may be implemented with Inficolor 3D technology or with Infitec® 3D technology (Infitec GmbH, Baden Wuerttemberg, Germany).

[0033] Other implementations are also contemplated. For example, the spectroscopic AR/VR eyewear **34** may have active stereoscopic capabilities, such as active shutters that cycle each display **37** and **38** on and off alternately. It is contemplated that changing the shutter rates may be used to provide individualized content between different users. For example, a first user and a second user, both with respective eyewear **34**, may have different assembled content if their active shutters are controlled at different rates. The control may be based on signals received from the system **32**, including signals embedded within the displayed frames. In other embodiments, the shutter control may be preset on the device. Active stereoscopic implementations may be advantageous in darker rides, because the lack of color or polarizing filters may permit more light to pass through the displays **37** and **38** when they are acting as lenses for stereoscopic viewing. It should also be understood that when the stereoscopic AR/VR eyewear **34** is being used in the AR/VR mode, the displays **37** and **38** may be used to generate an internal 3D or stereoscopic image. That is, in certain embodiments, the user views a transmitted image or a video stream that may be implemented stereoscopically. For example, the left eye display **38** may display a separate video channel than the right eye display **37**. Based on the perspective differences or slight differences in the displayed images or video stream between the left eye/righteye view, similar to those generated on projected stereoscopic images, a 3D illusion may be internally generated in the displayed content.

[0034] FIG. **4** illustrates various examples of AR/VR images **45** that may be generated by the graphics generation system **32**, or in other embodiments, that may be generated via the stereoscopic AR/VR eyewear **34**. Specifically, as illustrated in FIG. **3**, during a cycle of the thrill ride **12**, the graphics generation system **32** may render stereoscopic images **43**, the real-world images **44**, as well as various AR/VR graphical images **45** through the respective stereo-

scopic AR/VR eyewear **34** (e.g., via the respective displays **37** and **38**) of the rides passengers **22, 24, 26, 28**. For rendering stereoscopic images, the graphics generation system **32** may be used in conjunction with stereoscopic projectors **53**. The real-world images **44** may include rendered images of, for example, the tracks **18**, the facilities **14**, and/or other patrons or objects that the ride passengers **22, 24, 26, 28** would see while riding the thrill **12**, including the other passengers **22, 24, 26, 28**, even if the stereoscopic AR/VR eyewear **34** were not being worn by the ride passengers **22, 24, 26, 28**. However, as previously discussed with respect to FIG. **2**, in certain embodiments, it may be useful to enhance the thrill factor of the thrill ride **12** by rendering various AR/VR graphical images **45** to the respective displays **37** and **38** of the respective stereoscopic AR/VR eyewear **34** of the ride passengers **22, 24, 26**, and **28**.

[0035] For example, as further depicted in FIG. **3**, the graphics generation system **32** may render AR/VR graphical images **45** (illustrated via the dashed lines) that may include, for example, an AR/VR image of a second mall of amusement park facilities **49**, an AR/VR image of one or more fictional characters **50**, an AR/VR image of a breach **52** of the tracks **18**, and/or additional AR/VR image **54, 56**, and **58**. In one embodiment, as illustrated in FIG. **3**, the AR/VR image **50** may include an image of a monster or other similar fictional character appearing (e.g., from the point of view of the ride passengers **22, 24, 26, 28** while wearing the stereoscopic AR/VR eyewear **34**) to be obstructing a portion of the tracks **18** as the passenger ride vehicle **20** traverses the tracks **18**. It should be appreciated that in addition to AR/VR graphical images **45** (e.g., virtual augmentations) that include an added image, the graphics generation system **32** may also render certain AR/VR graphical images **45** that include a deletion of one or more real-world physical objects that no longer appear while the ride passengers **22, 24, 26, 28** are wearing the stereoscopic AR/VR eyewear **34**. For example, the AR/VR image of the facilities **49** may appear at a place in which the attraction **16** is placed in the real-world environment.

[0036] As previously discussed, in certain embodiments, the graphics generation system **32** may render the AR/VR graphical images **45** based on, for example, the position or location of the passenger ride vehicle **20** along the tracks **18** at any given time during a cycle of the thrill ride **12**, a predetermined distance traveled by the passenger ride vehicle **20** during a cycle of the thrill ride **12**, or after a predetermined lapse of time. For example, in one embodiment, once the passenger ride vehicle travels to a point **60** (e.g., defined by a certain distance **62** or location on the tracks **18**), the AR/VR image of the fictional character **50** may appear to the ride passengers **22, 24, 26, 28**, via the stereoscopic AR/VR eyewear **34**, as obstructing a place on the tracks **18** not yet traversed by the passenger ride vehicle **20** during a given cycle of the thrill ride **12**. Similarly, once the passenger ride vehicle **20** travels to a point **62** (e.g., defined by a certain distance **62** or location on the tracks **18**), the AR/VR image of the breach **52** of the tracks **18** (e.g., appearance of a broken track) may appear to the ride passengers **22, 24, 26, 28**, via the stereoscopic AR/VR eyewear **34**, as though the passenger ride vehicle **20** will encounter a place in which there is no supporting tracks **18**. The graphics generation system **32** may render the AR/VR graphical images **45** based on the identity of the individual users of the eyewear **34**. Each eyewear **34** may be associated

with an RFID tag or other identification element that transmits an identification signal to the graphics generation system **32**. The system **32** may select the overlaid image from among several options stored in the memory **47** based on the identity of the ride passenger (e.g., ride passengers **22, 24, 26, 28**). In this manner, each passenger in a ride vehicle **20** may receive customized content that is different from that received by the other passengers in the ride vehicle **20**. For example, in a ride that includes character content, certain passengers wearing particular eyewear **34** may be associated with particular characters. In such embodiments, the overlaid AR/VR image may be associated with the particular character. The ride passengers may (e.g., ride passengers **22, 24, 26, 28**) may have individualized interactive content displayed via the eyewear **34** that is based on previous park experiences, rewards, characters, passenger age or interests, passenger profile information acquired from a central server, etc. In one embodiment, a guest in an interactive arena may see a particular overlaid image displayed only if they successfully perform a physical action (e.g., punch a block or open a door).

[0037] Furthermore, in certain embodiments, the illumination map generated by the graphics generation system **32** may allow the graphics generation system **32** to include one or more detection and/or trigger points (e.g., trigger point for which to introduce the AR/VR images **45**) at every mile of the tracks **18**, every yard of the tracks **18**, every foot of the tracks **18**, every inch of the tracks **18**, every centimeter of the tracks **18**, or every millimeter of the tracks **18**. In this way, the graphics generation system **32** may detect when to begin rendering of the AR/VR graphical images **45** based on position or location, distance traveled, and/or time elapsed during a cycle of the thrill ride **12** with sufficient accuracy and efficiency. Furthermore, certain images **54, 56** illustrate that one or more of the AR/VR graphical images **45** may appear to the ride passengers **22, 24, 26, 28** as interacting with each other (e.g., overlapping or touching). In one embodiment, the images (e.g., images **54A** and **54B**) may be stereoscopic images. Similarly, the AR/VR image **58** illustrates an example of AR/VR graphical images **45** that may appear outside the line of sight or the point of view (e.g., blind spot) of the ride passengers **22, 24, 26, 28** that may be nevertheless perceived by the ride passengers **22, 24, 26, 28** should any of them look into the direction of the AR/VR image **58**. It should be noted that completely different images may also be provided to different ride passengers **22, 24, 26, 28** such that one or more of the ride passengers **22, 24, 26, 28** have partially or completely different ride experiences or even ride themes.

[0038] In certain embodiments, as discussed above with respect to FIG. **2**, because the graphics generation system **32** may render the real-world images **44** and the AR/VR images **45** to each of the respective displays **37** and **38** of the stereoscopic AR/VR eyewear **34** worn by each of the respective the ride passengers **22, 24, 26**, and **28**, the ride passengers **22, 24, 26, 28** may each perceive the real-world images **44** (e.g., facilities **14**, thrill ride **12**, and so forth) and the AR/VR images **45** (e.g., AR/VR images or virtual augmentations **49, 50, 52, 54, 56**, and **58**) temporally and spatially commensurate with their respective points of view, thus creating a photorealistic effect as the passenger ride vehicle **20** traverses the tracks **18**. Furthermore, in other embodiments, in addition to the AR/VR images **45** (e.g., AR/VR images or virtual augmentations **49, 50, 52, 54, 56**,

and **58**), the graphics generation system **32** may also trigger one or more sound effects, haptic feedback effects, scented effects, and so forth that may coincide with the appearances of the AR/VR images **45** on the stereoscopic AR/VR eyewear **34**. In some embodiments, the graphics generation system **32** is integral with the stereoscopic AR/VR eyewear **34**.

[0039] In this way, by providing the stereoscopic AR/VR eyewear **34** and the graphics generation system **32** to create an AR experience, a VR experience, and/or other computed-mediated reality experience, the stereoscopic AR/VR eyewear **34** and the graphics generation system **32** may enhance the thrill factor of the thrill ride **12**, and, by extension, the experience of the ride passengers **22, 24, 26, 28** while on the thrill ride **12**. Moreover, by providing the stereoscopic AR/VR eyewear **34** as AR/VR eyeglasses, as opposed to bulkier and more cumbersome devices such as traditional head-mounted displays (HMDs), the ride passengers **22, 24, 26, 28** may be provided with greater freedom of movement, as well as a more photorealistic experience. For example, each of the ride passengers **22, 24, 26, 28** may be able to see each other ride passenger **22, 24, 26, 28**, as well as the passenger ride vehicle **20** itself even when wearing the stereoscopic AR/VR eyewear **34**. Moreover, because the stereoscopic AR/VR eyewear **34** may include individual cameras **40, 42** and individual displays **37, 38**, data with respect to the respective points of view of each eye of the ride passengers **22, 24, 26, 28** may be captured by the stereoscopic AR/VR eyewear **34**. Thus, the graphics generation system **32** may render real-world images **44** and AR/VR images **45** on the displays **37, 38** of the stereoscopic AR/VR eyewear **34** that are consistent with the respective points of view of the ride passengers **22, 24, 26, 28**. Such advantages may be unavailable using devices such as traditional HMDs. In other embodiments, the system **32** may use audio watermarking to synchronize AR content within the ride **12**, e.g., to synchronize played media to AR images.

[0040] Turning now to FIG. **5**, a flow diagram is presented, illustrating an embodiment of a process **80** useful in creating a stereoscopic experience, an AR experience, a VR experience, and/or other computed-mediated experience during a thrill ride using, for example, the computer graphics generation system **32** depicted in FIG. **2**. The process **80** may be representative of initiated code or instructions stored in a non-transitory computer-readable medium (e.g., the memory **47**) and executed, for example, by the processor **46** included in the computer graphics generation system **32**. The process **64** may begin with the processor **46** receiving (block **82**) position information for a user wearing the eyewear **34**. As discussed, the eyewear position may be assessed by RFID tags on each device, by cameras, GPS, etc. Based on the position, the system **32** may determine that the user wearing the eyewear **34** is positioned in the proximity of a desired stereoscopic event (block **84**). Accordingly, the system **32** may initiate or maintain projection of stereoscopic images for display and viewing by the user (block **86**).

[0041] If the user of the eyewear **34** is a passenger on a ride vehicle (see FIG. **4**) or otherwise moving relative to the environment, the method **80** may receive updated position information (block **88**) to reflect that the user has moved to a new location associated with a desired mixed or AR/VR effect (block **90**). To generate the AR/VR effect, the method may access pre-scanned or receive real-time captured image data (block **92**). For example, the processor **46** may receive real-time video data (e.g., live video) captured via cameras **40, 42** of the stereoscopic AR/VR eyewear **34**. The process **64** may then continue with the processor **46** generating a visualization of the real-world environment based on the real-world image data. For example, the processor **46** may generate a video data stream of the real-world environment (e.g., the amusement park **10**) to be displayed on the displays **37, 38** of the stereoscopic AR/VR eyewear **34**.

[0042] The process **64** may then continue with the processor **46** overlaying (block **92**) or superimposing one or more augmented or virtual reality images onto the generated visualization of the real-world environment. For example, the processor **46** may generate a video data stream of the real-world images **44** (e.g., facilities **14**, thrill ride **12**), and overlay or superimpose the AR/VR images **45** (e.g., AR/VR images or virtual augmentations **49, 50, 52, 54, 56**, and **58**) onto the real-world images **44** using one or more video merging and/or optical merging techniques. As previously discussed above, in certain embodiments, for example, the processor **46** of the graphics generation system **32** may render the AR/VR graphical images **45** based on, for example, the position or location of the passenger ride vehicle **20** along the tracks **18** at any given time during a cycle of the thrill ride **12**, a predetermined distance traveled by the passenger ride vehicle **20** during a cycle of the thrill ride **12**, or after a predetermined lapse of time. In other embodiments, the graphics generation system **32** may perform one or more geometric or photometric recognition algorithms on the video or image data captured via the cameras **40, 42** to determine the points of location of the ride vehicle **20** and when to introduce the AR/VR graphical images **45**. The process **64** may then conclude with the processor **46** transmitting (block **94**) the overlaid augmented or virtual reality image data (e.g., AR/VR images **45**) along with the real-world environment data (e.g., real-world images **44**) to be displayed on the displays **37, 38** of the stereoscopic AR/VR eyewear **34** to enhance the thrill factor of the thrill ride **12**, and, by extension, the experience of the ride passengers **22, 24, 26, 28** while on the thrill ride **12**. The system **32** is configured to permit the eyewear **34** to switch between different viewing modes, e.g., AR/VR, stereoscopic, and real world (e.g., no effects). The switch may be based on the time or position of the user within the ride **12** and may be mediated by a control signal from the system **32**. The system **32** may also receive user input, e.g., via an input button or switch on the eyewear. For example, certain users may be sensitive to stereoscopic image display. Such users may have the option of turning off the 3D stereoscopic viewing and the system **32** may provide alternative video data in the proximity of stereoscopic effects.

[0043] Technical effects of the present embodiments relate to systems and methods of providing an augmented reality (AR) experience, a virtual reality (VR) experience, a mixed reality (e.g., a combination of AR and VR) experience, or a combination thereof, as part of a thrill ride in an amusement park or theme park. In certain embodiments, each ride passenger may be provided with eyewear (e.g., stereoscopic AR/VR eyewear **34** that is configured to be used as AR/VR eyewear) to be worn during a cycle of the thrill ride. In on embodiment, the eyewear is both AR/VR capable as well as being capable of facilitating the viewing of projected stereoscopic images. To facilitate an AR/VR or mixed reality experience, the eyewear may be configured to display virtual

images overlaid over a real-world representation. To that end, the eyewear may include at least two cameras, which may respectively correspond to the respective points of view of the ride passengers, and may be used to capture real-time video data (e.g., live video) of the real-world environment (e.g., the physical amusement park) of the ride passengers and/or the thrill ride. The eyewear may also include at least two displays respectively corresponding to each eye of the ride passengers. In certain embodiments, a computer graphics generation system may also be provided. The computer graphics generation system may render a video stream of the real-world environment along with various AR/VR graphical images to the respective displays of the respective stereoscopic eyewear of the ride passengers during a cycle of the thrill ride. For example, in one embodiment, the graphics generation system 32 may render the AR/VR graphical images to the eyewear based on, for example, the position or location of the passenger ride vehicle along the tracks at any given time during a cycle of the thrill ride, a predetermined distance traveled by the passenger ride vehicle during a cycle of the thrill ride, or after a predetermined lapse of time. In this way, by using the eyewear and the graphics generation system to create an AR experience, a VR experience, and/or mixed reality experience, the eyewear and the computer graphics generation system may enhance the thrill factor of the thrill ride, and, by extension, may enhance the experience of the ride passengers as they ride the thrill ride.

[0044] While only certain features of the present embodiments have been illustrated and described herein, many modifications and changes will occur to those skilled in the art. It is, therefore, to be understood that the appended claims are intended to cover all such modifications and changes as fall within the true spirit of the present disclosure. Further, it should be understood that certain elements of the disclosed embodiments may be combined or exchanged with one another.

1. A ride system, comprising:
   eyewear configured to be worn by a user, wherein the eyewear comprises a display having a stereoscopic feature configured to permit viewing of externally generated stereoscopically displayed images; and
   a computer graphics generation system communicatively coupled to the eyewear, and configured to:
      generate streaming media of a real world environment based on image data of the real-world environment;
      generate one or more virtual augmentations superimposed on the streaming media of the real world environment;
      transmit the streaming media of the real world environment along with the one or more superimposed virtual augmentations to be displayed on the display of the eyewear; and
      project stereoscopic images into the real world environment.

2. The ride system of claim 1, wherein the display of the eyewear comprises a first display and a second display, and wherein the first display is configured to display the streaming media to a first eye of the user and the second display is configured to display the streaming media to a second eye of the user.

3. The ride system of claim 2, wherein each of the first display and the second display comprises a light field display, a liquid crystal display (LCD), or an organic light emitting diode (OLED) display.

4. The ride system of claim 2, comprising a first polarized filter on or in the first display oriented differently than a second polarized filter on or in the second display.

5. The ride system of claim 2, comprising a first color filter on or in the first display configured to filter light of a different wavelength than a second color filter on or in the second display.

6. The ride system of claim 1, wherein the eyewear comprises one or more cameras configured to obtain the image data of the real world environment.

7. The ride system of claim 1, wherein the user is a passenger in a ride vehicle and wherein the computer graphics generation system is configured to generate the one or more virtual augmentations when the ride vehicle travels to a predetermined location, travels a predetermined distance, after a predetermined lapse of time, or any combination thereof, during a ride cycle.

8. The ride system of claim 7, comprising a rollercoaster including a track, and wherein the computer graphics generation system is configured to generate the one or more virtual augmentations when the ride vehicle travels to the predetermined location along the track, travels the predetermined distance along the track, after the predetermined lapse of time, or any combination thereof.

9. The ride system of claim 1, wherein the computer graphics generation system is configured to generate the streaming media of the real world environment based on an orientation of the eyewear, a position of the user, a point of view of the user, profile information of the user, a character associated with the user, or a combination thereof.

10. The ride system of claim 9, comprising a positioning sensor within the eyewear for detecting the orientation of the eyewear.

11. The ride system of claim 9, comprising a monitoring system configured to monitor physical attributes of the eyewear to determine the orientation of the eyewear.

12. The ride system of claim 9, comprising a sensor configured to detect the position of the user within the ride system, wherein the ride system comprises a ride vehicle or an arena.

13. The ride system of claim 1, comprising a second eyewear configured to be worn by a second user, wherein the second eyewear comprises a display having a stereoscopic feature configured to permit viewing of the externally generated stereoscopically displayed images.

14. The ride system of claim 1, wherein the computer graphics generation system is configured to stop generating the streaming media of the real world environment based on an orientation of the eyewear, a position of the user, a point of view of the user, or a combination thereof and to start operating in a mode that permits viewing of stereoscopic images through the display.

15. The ride system of claim 1, wherein the computer graphics generation system is configured to:
   receive an indication of a lighting, a contrast, a brightness, or a combination thereof, associated with the real world environment; and
   generate the streaming media of the real world environment and the one or more superimposed virtual augmentations adjusted to reflect the lighting, the contrast, the brightness, or the combination thereof, of the real world environment.

16. A wearable electronic device, comprising:

a frame comprising a frame front;

a left eye display lens and a right eye display lens coupled to the frame front;

a first filter on the left eye display lens;

a second filter on the right eye display lens, wherein the first filter is different than the second filter; and

processing circuitry configured to:

receive a signal from the computer graphics generation system, wherein the signal comprises a video stream of a virtualization of a real world environment along with at least one augmented reality (AR) image or at least one virtual reality (VR) image included in the video stream; and

cause the left eye display and the right eye display to display the video stream.

17. The wearable electronic device of claim 16, comprising a camera coupled to the frame front and configured to capture image data of the real world environment in real time.

18. The wearable electronic device of claim 16, wherein the processing circuitry is configured to transmit the video stream to the left eye display and the right eye display to cause a stereoscopic video display including the augmented reality (AR) image.

19. The wearable electronic device of claim 16, comprising an orientation sensor, a position sensor, an accelerometer, a magnetometer, a gyroscope, or any combination thereof.

20. The wearable electronic device of claim 16, wherein image data of the real world environment is generated by a camera positioned in the real world environment or is historical image data.

21. A method, comprising:

receiving or accessing environmental image data via a computer graphics generation system,

generating a virtualization of a real world environment of the amusement park based on the environmental image data;

overlaying an augmented reality (AR) image or a virtual reality (VR) image onto the virtualization of the real world environment;

transmitting the overlaid AR image or the VR image along with the virtualization of the real world environment to the eyewear during the cycle of the amusement park ride;

transmitting a signal to the eyewear to permit viewing through displays of the eyewear;

projecting stereoscopic images onto a surface of the real-world environment after transmitting the signal; and

causing the stereoscopic images to be reflected through filters in the eyewear into a left and right eye of a user to generate an illusion of a 3D image.

22. The method of claim 21, comprising receiving data associated with a position of a ride passenger of the amusement park ride, an orientation of the ride passenger, a point of view of the ride passenger, or a combination thereof.

23. The method of claim 21, receiving an identification signal associated with the eyewear and wherein the overlaid AR image or the VR image is selected based on the identification signal.

24. The method of claim 21, receiving a second identification signal associated with second eyewear and transmitting a second overlaid AR image or the VR image along with the virtualization of the real world environment to the eyewear during the cycle of the amusement park ride, wherein the second overlaid AR image or the VR image is selected based on the second identification signal.

25. The method of claim 21, receiving or accessing environmental image data comprises receiving real-time image data from a camera coupled to the eyewear.

* * * * *